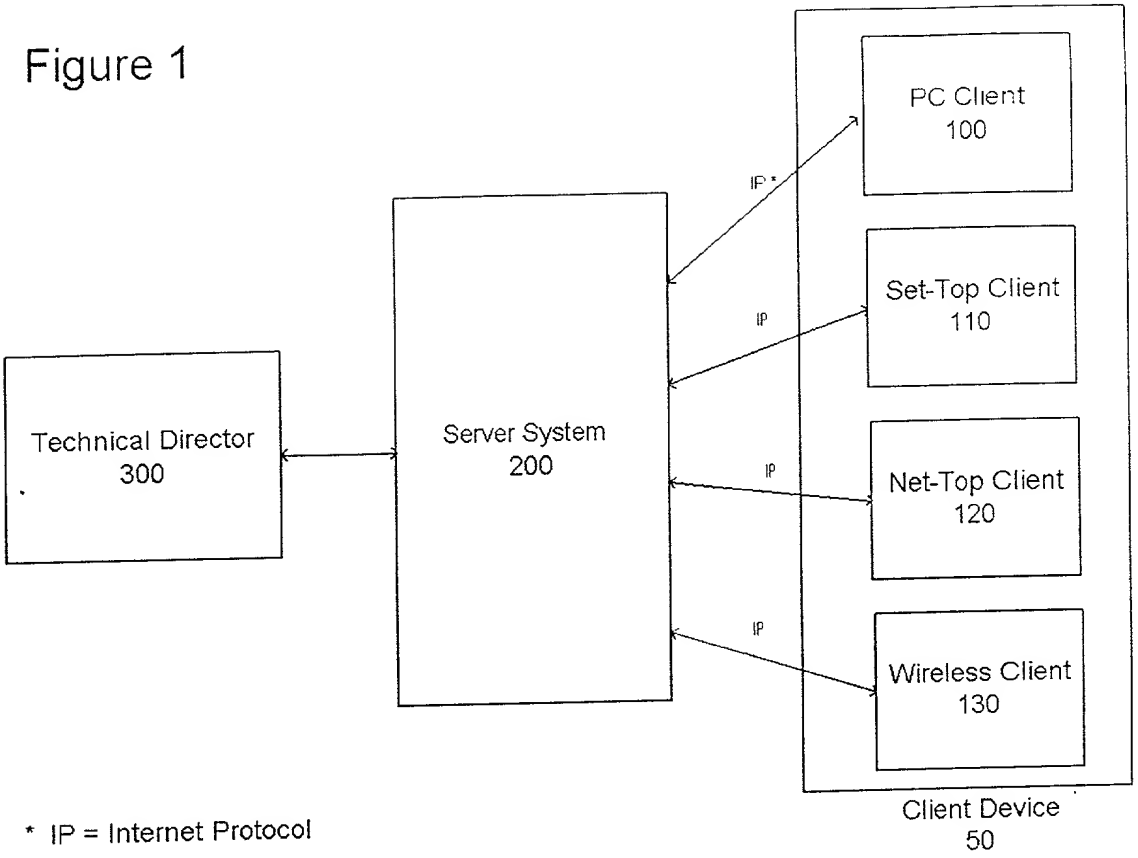
Figure 1



* IP = Internet Protocol

Figure 2

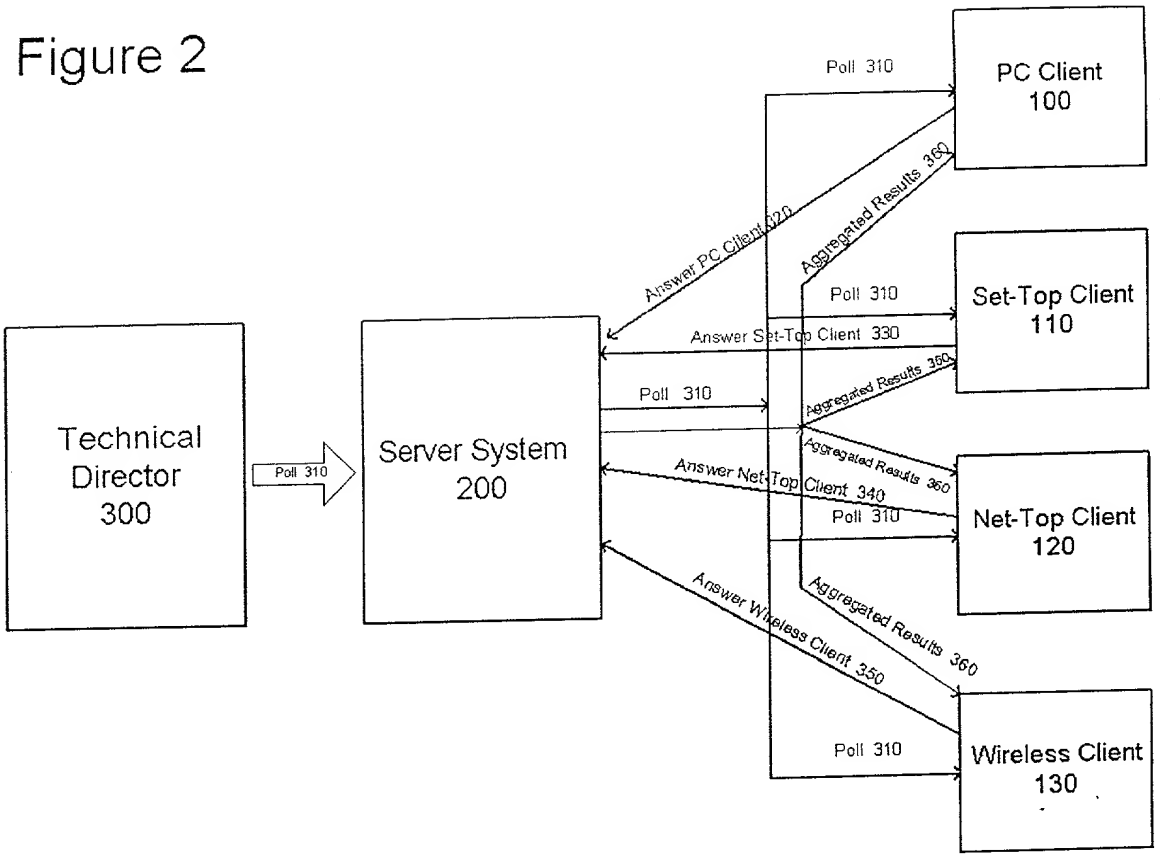


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Figure 3

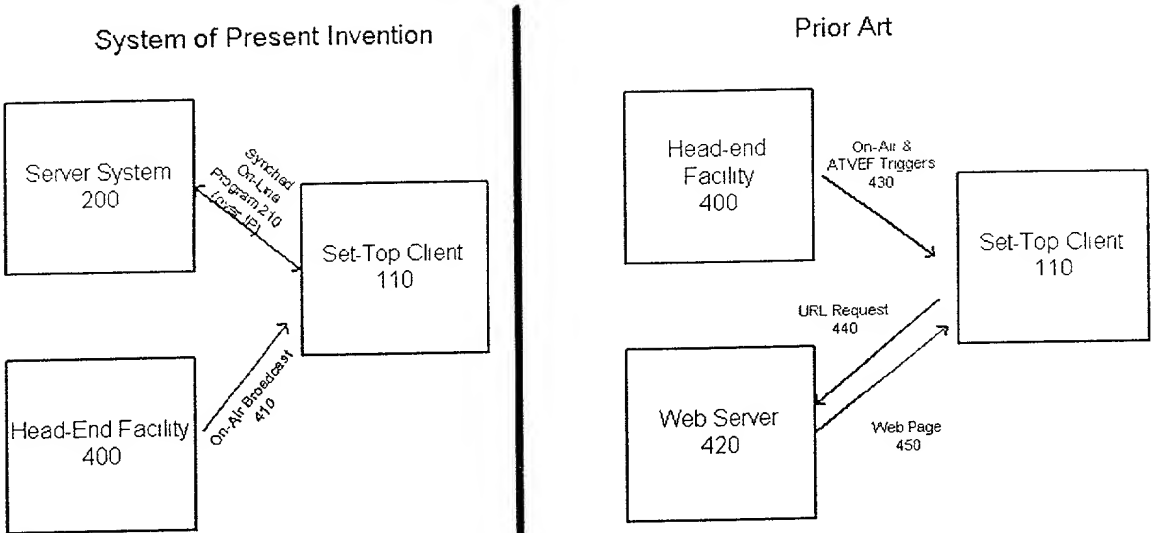

System of Present Invention
Server System 200
Synched On-Line Program 210 (over IP)
Set-Top Client 110
Head-End Facility 400
On-Air Broadcast 410
Prior Art
Head-end Facility 400
On-Air & ATVEF Triggers 430
Set-Top Client 110
URL Request 440
Web Server 420
Web Page 450

Figure 4

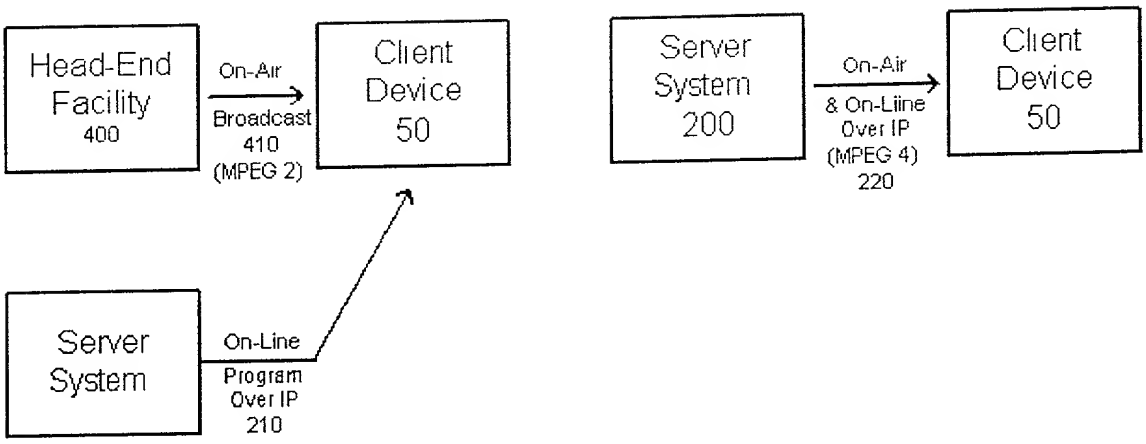

Head-End Facility 400
On-Air Broadcast 410 (MPEG 2)
Client Device 50
Server System
On-Line Program Over IP 210
Server System 200
On-Air & On-Liine Over IP (MPEG 4) 220
Client Device 50

Figure 5

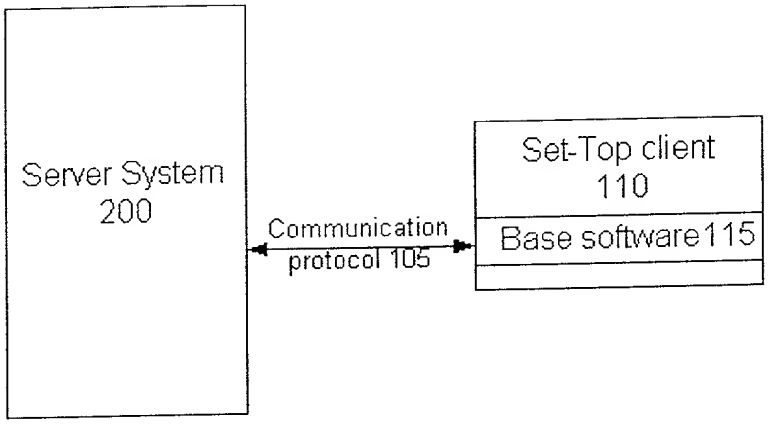

Server System
200
Communication
protocol 105
Set-Top client
110
Base software 115

Figure 6

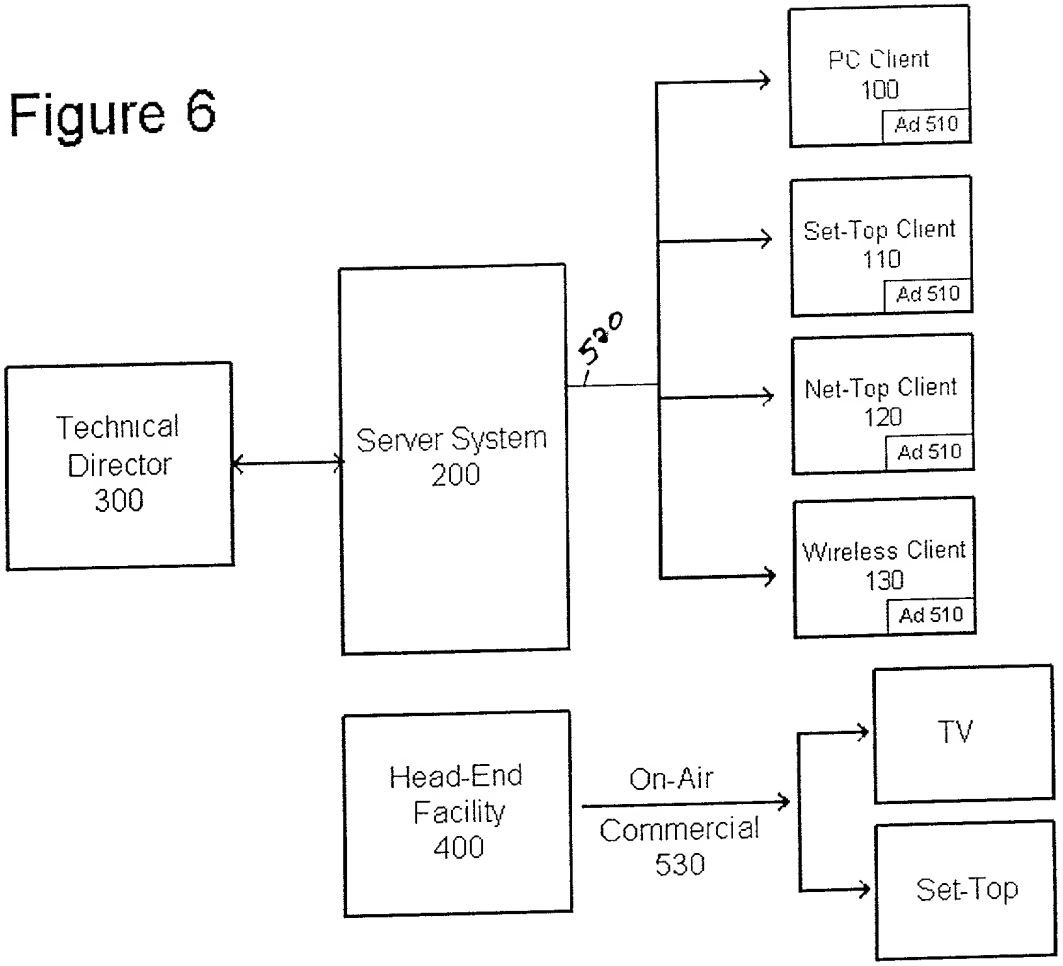

PC Client
100
Ad 510
Set-Top Client
110
Ad 510
Net-Top Client
120
Ad 510
Wireless Client
130
Ad 510
520
Technical
Director
300
Server System
200
Head-End
Facility
400
On-Air
Commercial
530
TV
Set-Top

Figure 7

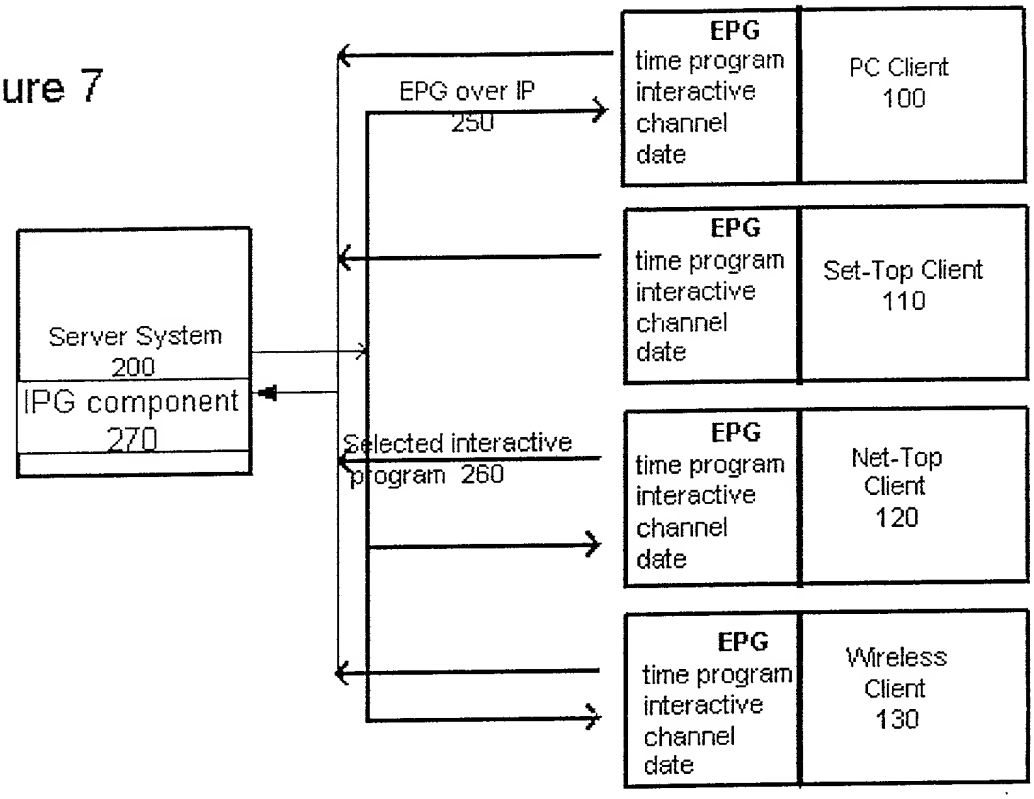

Server System
200
IPG component
270
EPG over IP
250
Selected interactive
program 260
EPG
time program
interactive
channel
date
PC Client
100
EPG
time program
interactive
channel
date
Set-Top Client
110
EPG
time program
interactive
channel
date
Net-Top
Client
120
EPG
time program
interactive
channel
date
Wireless
Client
130

Figure 8

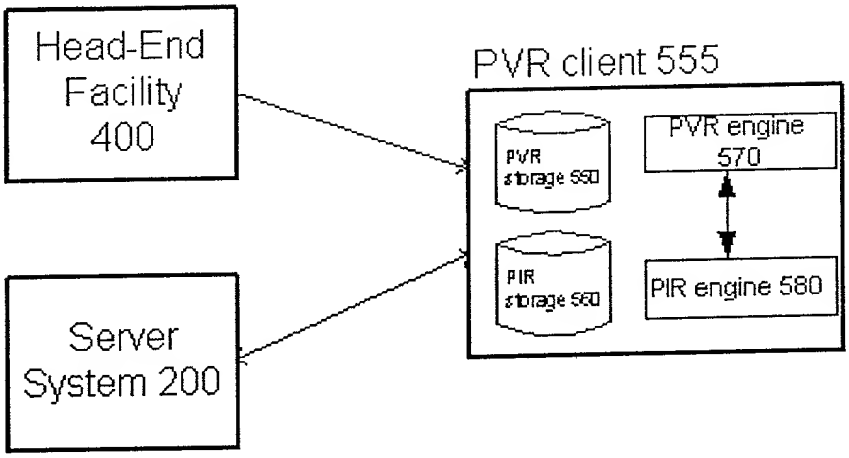
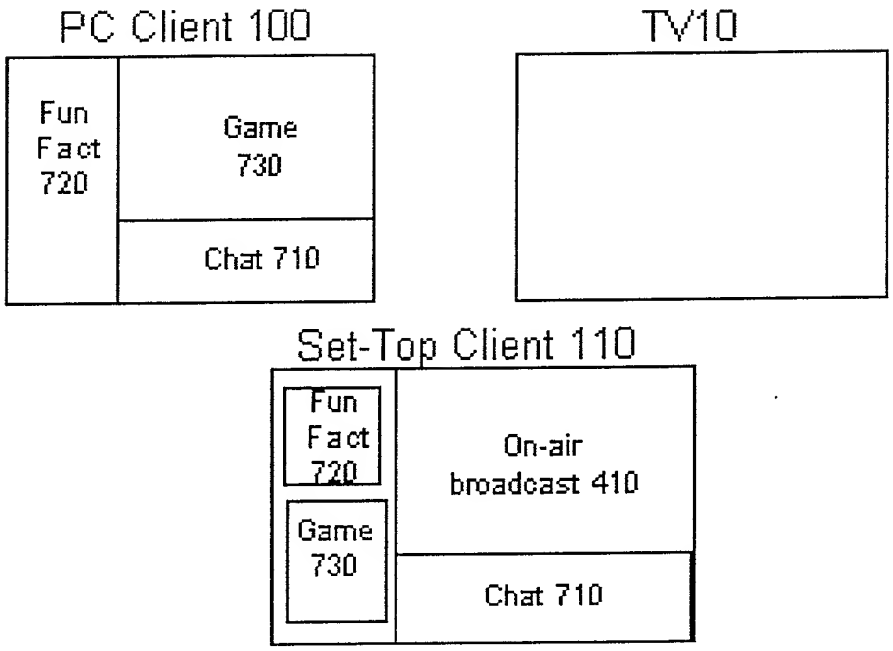

Head-End Facility 400
Server System 200
PVR client 555
PVR storage 560
PIR storage 560
PVR engine 570
PIR engine 580

Figure 9


PC Client 100
Fun Fact 720
Game 730
Chat 710
TV10
Set-Top Client 110
Fun Fact 720
Game 730
On-air broadcast 410
Chat 710